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DESCRIPTION OF A NEW SPECIES OF SQUALOID SHARK FROM JAPAN.

BY CHIYOMATSU ISHIKAWA, PH.D.

Squalus japonicus Ishikawa, new species.*Acanthias vulgaris* Schlegel, Fauna Japonica, Poisson, p. 304, Pl. 135, 1850;
Acanthias vulgaris, Ishikawa, Prelim. Cat., p. 61, 1897. Not of Risso.

Body elongate, slender, tail moderately tapering behind. Head rather narrow; snout produced, pointed, upper surface flattened; nostrils nearer mouth than tip of snout, nearly midway between angle of mouth and tip of snout. Nasal flaps normally formed.

Eyes large, lateral, situated nearer first gill-opening than end of snout. Length of eyelid a little less than half distance from its anterior angle to tip of snout. Spiracles large, closely posterior to and little above eye, vertical diameter of spiracle slightly over one-third length of eye. Spiracular valve not very fleshy. Narrow groove between posterior angle of eye and lower border of spiracle.

Mouth moderate, slightly curved, situated at about three-fifths distance from tip of snout to level of first gill-opening. Upper lip well developed, lower closely attached to teeth within. Oral groove nearly straight, deep.

Teeth of upper jaw smaller than those of lower, and somewhat more erect. Gill-openings in front of base of pectoral, and slightly above, fourth and fifth gill-slits somewhat nearer together than preceding ones.

First dorsal nearer to pectoral than to ventral, its origin somewhat in advance of inner posterior angle of pectoral, midway between tip of snout and origin of second dorsal; first dorsal spine slightly less than height of fin; posterior border somewhat emarginate and slightly produced. Second dorsal about midway between ventral and caudal, smaller, posterior margin rather deeply emarginate, lower lobe moderately produced; spine as long as fin and longer than that of first. Both spines triangular, without any lateral groove, but hinder margin slightly hollowed out. Pectorals large, but shorter than head, reaching beyond origin of first dorsal, its hinder margin moderately emarginate. Ventrals midway between first and second dorsals; caudal lobes well developed. Upper caudal groove triangular and very distinct; lower rather inconspicuous.

Scales very minute, closely set; each with a median keel which ends

in a point and with smaller ones on each side. Scales at extreme end of snout granular, and without any keel. Lateral line distinct.

Male copulatory organ large, with a hook-like appendage near extreme end on inner side, and with another hook on outer side proximally to the former.

Three specimens were examined, two males bought at the Tokyo market, and said to have been caught in the Sagami Bay, and a single female from Kagoshima. They are in the Imperial Museum of Tokyo.

The proportional lengths of different parts in a male specimen are as follows:

	♂
Total length	700 mm.
Snout to nostril	42 "
Snout to first gill-slit	120 "
Snout to mouth	75 "
Nostril to mouth	30 "
Mouth to anus	276 "
Diameter of body at first gill-slit	74 "
Diameter at spiracles	73 "
Length of upper caudal lobe	132 "
Length of lower caudal lobe	72 "
Base of first dorsal	30 "
Height of first dorsal	39 "
First dorsal to ventral	43 "
Base of second dorsal	24 "
Height of second dorsal	25 "
Second dorsal to upper caudal lobe	73 "
Length of pectoral	88 "
Breadth of pectoral	60 "
Eye to dorsal end of first gill-slit	44 "
Distance between nostrils	33 "
Gape	36 "
Length of eye	26 "
Length of oral groove	24 "
Deepest part of oral groove	8 "
Snout to eye	50 "
First dorsal spine to second dorsal spine	230 "
Eye to first gill-slit	45 "
Snout to first dorsal spine	220 "
Length of first dorsal spine	38 "
Dorsal margin of dorsal fin	63 "
Length of second dorsal spine	49 "
Dorsal margin of second dorsal fin	47 "

General Considerations.—Judging from the very scanty literature we have, I am inclined to consider the present species to come nearest to

Acanthias blainvillii of Risso, from which it differs only in the position of the first dorsal, the origin of which Günther gives as being placed "conspicuously in advance of the inner posterior angle of the pectoral" (Günther, *Catalogue of Fishes*, Vol. VIII, p. 419, 1870), otherwise it accords well with the description given by Müller and Henle to this species (Müller and Henle, *Plagiostomen*, 1841, pp. 84-85), so that I was rather inclined to regard our specimen to be the same species. Since, however, the descriptions of these authors are very short, making the identification of the species difficult, I have allowed myself to propose a new name for our Japanese form.

A fact of some interest regarding this species, however, is the presence of two hooks attached to the copulatory organ in our forms, whereas Müller and Henle give it to be the generic character of *Acanthias* that the "Männchen haben an der äussern Seite des Endes der Anhänge einen beweglichen, am Ende wenig gekrümmten Dorn oder Stachel." Whether the second spine we find in our specimen does exist in the specimens of these authors, or whether it was overlooked by them, which fact is, judging from the otherwise very careful and accurate descriptions of the German authors, very improbable, I am at loss to form any definite opinions. In case, however, the first alternative proves to be the fact, then the specific distinction of our forms is beyond any doubt.

This species is well distinguished from the more common Japanese species of this genus, *Squalus mitsukurii* of Jordan and Snyder.